North Carolina
Office of Information Technology Services
Technology Plan 2010-2012

Initiatives for Developing and Delivering High-Quality and Cost-Effective Services in a Customer-Responsive Manner

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ITS Technology Plan 2010-2012

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Executive Summary

Purpose and Background

The primary purpose of the Information Technology Services (ITS) information technology (IT) plan is to provide an overview of the major projects and initiatives within the ITS organization that:

- Improve the development and delivery of high-quality and cost-effective services in a customer-responsive manner.

- Assist in the accomplishment of the priorities and initiatives in the State CIO's Statewide IT plan.

ITS provides business, infrastructure, network, telecommunications, and hosting services to state agencies and local governments on a fee-for-service basis. The State IT plan is the State CIO's biennial road map for the management of the state's information technology.

In support of the development of the State IT Plan ITS will provide a summary of its Major Operational Objectives, its Major IT Initiatives as well as any pre-requisites or enabling technologies required to achieve success in these focus areas.

The current state of the economy has had a significant impact on the citizens of North Carolina as well as State Government within the state. Double digit levels of unemployment within the state have resulted in a shortfall of tax revenues against plan while driving significantly higher costs within many agencies such as ESC who has struggled to support the vast number of unemployed citizens with the services it provides. In addition, virtually all agencies have been burdened with unprecedented budget cuts which can only be accomplished through cuts in areas such a staff reductions, full project and program cancellations, and deep operational cuts. With a projected short fall of three billion dollars in the coming fiscal year, there does not appear to be any relief on the horizon for citizens or the State Agencies that provide services to them.

Despite the economic challenges facing the state of North Carolina, the demand for IT services from various state agencies on ITS has not declined. Because of the increased demand for technical services, the consolidation of the state's technical infrastructure, and the State CIO's increased statutory requirements, ITS and the Office of the State CIO have grown substantially in recent years. Today, ITS and the State CIO's Office comprise two data centers (eastern in Raleigh and western in Rutherford County), have more than 600 employees, and an annual budget approaching $250 million.

However, for agencies reducing the costs for services procured from ITS or any other vendor is becoming one of their most important objectives. The need for IT services provided at the most cost effective rates achievable is of paramount importance to most state agencies

ITS receives minimal General Fund appropriations; therefore, in order to remain fiscally healthy, it must offer desired services of acceptable quality and at affordable and market competitive rates in a timely manner. ITS does this by:

- Employing economies of scale that spread fixed expenses of infrastructure over combined transaction volumes to minimize unit costs.
- Aggregating purchasing demand to obtain maximum volume discounts.
- Leveraging scarce and expensive technical personnel and hardware and software resources for statewide use, so these are available at the lowest costs to all customers.

Based on all of this, a shift in focus for ITS and for this IT plan versus years past is being brought forward in an effort to assist all of State Government and thereby the citizens of North Carolina by focusing on driving operational IT costs down for our customers while maintaining or improving the quality of services delivered.

Information about ITS, and the services it provides, can be found at http://www.its.state.nc.us/About/AboutITS.asp.

ITS Plan Highlights

As was true with last year's plan, this IT plan again features these three underlying threads regarding ITS services:

- **Quality-focus** – ITS' services are relevant to the business of the customer; meet customer requirements; and consistently satisfy customer performance needs for availability, reliability, and resiliency/recovery. Demonstrable measurement of performance and continuous improvement are areas of ongoing attention.
- **Cost-effective** – ITS' services are cost-justifiable from the customer's perspective, as the value received is commensurate with the price paid.
- **Customer-responsive** – The ITS organization exists only because the persons who commission, pay for, and use its services are pleased with them and the manner in which they are provided, including timeliness and alignment with customer requirements.

ITS Mission

The Office of Information Technology Services (ITS) provides a wide array of information technology services -- from personal computers to mainframe hosting -- to state agencies and local governments. The agency is funded almost entirely through fees it charges for services. The ITS mission statement is:

"In partnership with state agencies, ITS provides appropriate and cost-justified technology tools and solutions to enable the delivery of services to citizens, businesses and government. ITS seeks out relevant and value based new technologies to help agencies find solutions for their business problems."

ITS does this by:

- ✓ Providing high quality, reliable and cost-effective services
- ✓ Maintaining and improving effective CUSTOMER-IT organizational relationships
- ✓ Adopting a continuous improvement approach to IT service quality
- ✓ Ensuring that the IT services meet the current and evolving needs of the business.

In addition to the goals listed above, the intent of the ITS CIO is to focus our efforts around three issues:

- ✓ Listening to our clients,
- ✓ Communicating with them and with staff, and
- ✓ Using metrics to measure our improvements in service delivery.

Major agency IT initiatives & enabling technologies

As requested in the SCIO Memo dated August 9, 2010 and in support of the ITS Mission, this portion of the ITS plan will focus on providing information which will be used by the SCIO and his staff in the development of an overall State IT Plan. Each of the remaining sections of the ITS IT Plan will reference one or more of the requested appendix sections from the aforementioned SCIO Memo as noted above. In an attempt to provide a more natural flow of the information provided under this plan the sequencing of its content has been modified from the appendix sequence as requested by the SCIO.

Customer Segmentation Definition (Requirement A.4)

Acting on a fee-for-service basis ITS provides a variety of services to a large customer population of State, County and Local Government entities as well as citizens and businesses within North Carolina. From within these major groupings come a wide variety of user types or user profiles that range from very basic users of PC's or IT services to highly knowledgeable and capable IT professionals.

From both a volume and diversity of services procured from ITS, our Consolidated Agency customers represent our first and possibly our most challenging customer sub sets. They procure the vast majority of their IT services from ITS and rely on ITS for most of their day to day support. In supporting these agencies, ITS serves a broad range of users ranging from business professionals with little IT knowledge or experience to IT professionals.

Executive Branch Agencies outside of the consolidated agencies make up a significant portion of our customer base as well. However, this sub set of customers tend to be more technical in nature and usually include agency IT staff. They often engage ITS with requests for previously defined technical solutions on behalf of their agency business partners rather than bringing actual business requirements to the table.

Our third customer sub set includes a variety of State, County, and Local Government entities as well as a variety of other customers such as Community Colleges, universities, health providers etc. who generally procure commodity services from ITS based on the significant discounts that ITS receives on IT vendor contracts. Though they may have the opportunity to procure a wider variety of services from ITS, they generally do not procure as wide a variety of services as the Consolidated Agencies or other Executive Branch Agencies.

ITS represents a significant customer and consumer of its own services. Most ITS Enterprise Services procure different underpinning services from other lines of business within ITS to support in the delivery of their specific service to their

customer base. This is done in an effort to centralize services and functions while eliminating duplication across the organization. For example, ITS hosting services provides support and the platforms required to deliver enterprise applications, the hosting service will procure networking services from the network service group and all ITS departments procure ITS Services such as Managed Desktop Services, EIPT Phone Services and LAN connectivity in support of their primary roles and responsibilities within ITS.

Major Objectives, Initiatives, and Enabling Technologies (Req A.1 & A.5)

This outline provides a listing of Major ITS Objectives for the coming year as well as the Major Initiatives, enabling technologies (E.T.) and other prerequisite activities or tasks which will be required to succeed in achieving the objectives. Though detailed, this list should not be viewed as a complete list of all of activities ITS has on its plate for the coming year. As ITS exists to support its customer base in the delivery of their core business services to the citizens of North Carolina, it should also be understood that as individual agency goals, objectives and priorities evolve over time, to some degree the focus and priorities within ITS will also evolve to meet the ever changing needs of our customers.

- **Objective: Compliance to Laws & Legislation or Executive Mandates**

The key focus of this objective is to ensure that ITS complies with any new or existing laws and legislation that may set specific requirements on its daily operations or the delivery of services to its customer base. In addition this objective should address any specific executive orders or mandates which ITS is charged with executing over the course of the year.

- **IT Infrastructure and Assessment (INSA) Initiative – Requirement of SCIO**
  - Program Management Coordination
  - Selected Assessment Vendor
  - Accurate IT Cost Analysis Data
  - Service Managed within Cost Aligned Service Towers
  - Clear and Market Comparable Service Definitions

Description: INSA is the assessment of IT infrastructure, services, and costs in ITS and across all Cabinet Agencies. This program is being undertaken in response to Governor Perdue's directive in July 2010 to improve service, increase transparency, improve efficiency and reduce cost. Assessment recommendations may include in-sourcing or out-sourcing of specific services or a combination of both. This effort is considered to be of the highest

importance to the state at this time and requires a significant level of inter-agency collaboration and cooperation to ensure success.

- **Accurate, Understandable, and Transparent Customer Bills (Accounting Initiatives)**
  - Market Comparable Service Definitions
  - Costs Aligned to Services (within Service Towers)
  - Fully Self Sustaining Services
  - Revision of Rate Models and/or rates based on realigned budgets/costs
  - Asset Management System (E.T.) & Processes
  - Billing System (E.T.) & Processes
  - Cost Accounting System (E.T.) & Process

  Description: This effort is being undertaken to create/provide invoices that customers can easily understand and represent Services with naming conventions that are universally understood within a competitive environment (i.e., services that are established/delivered through contract/MOU/SLA) and easily tie back to our Service Catalog. Customer invoices will include activity/consumption information for all services provided to a customer, whether direct billed (collectable) or memo billed (non-collectable).

  Improvements in the entire order to cash workflow will be required to achieve success on this initiative. Many issues with the current billing process and the invoices that are produced are the result of problematic processes and tool usages throughout the current order to cash process. Establishing an order capture center of excellence that will provide a standard method of capturing customer requirements for standard products across the enterprise, deliver a specific product order to an identified team for scheduling and delivery of that product, also deliver that order to all peripheral ITS organizations (i.e., customer will order a quantity of standard products, customer will be notified as to delivery date, customer will be billed upon completion of order, customer name and address will be captured in Customer Relationship Management system, etc.). The integration/design of systems that will capture accounting and process information to ensure that product pricing is based on specific activities (i.e., tie NCAS general ledger information into budgeting, asset management, forecasting, and pricing processes). These systems are not integrated today and to do so will require adoption of a common billing system that is tied to all operations, to an Enterprise Resource Planning system, a CRM system, and process/financial modeling tools.

- **Vulnerability Scanning (Security Risk Assessment Initiative – Requirement of SCIO)**
  - Redefined Policies & Procedures as Required
  - Scanning Tools (E.T.)
  - Reporting Tools (E.T.)

  Description: The ITS Information Security Team (IS) provides leadership in the delivery of an on-going security program that ensures the confidentiality, integrity and availability of ITS's assets, intellectual property and the proprietary data of citizens of North Carolina against unauthorized use, disclosure, modification, damage or loss. In addition to their routine vulnerability scanning offer, ITS IS will provide an optional network penetration scanning service for ITS and consolidated agencies as required by the General Statute 147-33.111 as part of their annual assessments. ITS IS will provide executive level and detailed level scanning results as required by the State CIO.

- **Monthly SLA Performance Reporting**
  - Signed SLA Agreement
  - Defined SLA Reports
  - Infrastructure and Application Monitoring Tools (E.T.)
  - SLA Monitoring & Reporting Tools (E.T.)

  Description: Senate Bill 897, Section 6.7(e), requires ITS to develop Service Level Agreements with supported state agencies that includes metrics for both the agency and ITS. When either fails to meet metrics established by the SLA, a report and corrective action plan with timeline must be provided to OSBM and Fiscal Research within 10 days.

  In response to this legislation, ITS is distributing the following SLA reports on the 1st week of every month for the state agencies with signed SLAs:

  - A rolled up SLA report of all incidents resolved
  - A six month SLA trend report
  - Individual agency SLA reports

  In addition, a corrective action plan will be developed and included when SLA commitments have not been met for a given month.

  ITS is actively working to enhance and add value to the SLAs by including additional metrics such as service availability. In order to fully achieve this goal infrastructure and application monitoring tools

must be deployed, configured and managed to support accurate measurement of the defined SLA metrics.

- **Asset Management Strategy**
  - Organizational Commitment
  - Asset & Configuration Management Tools (E.T.)
  - Completed and Approved Processes

  Description: Asset Lifecycle Management (ALM) involves the integration of people, processes, and systems to optimize assets, which in our case includes hardware (servers, network devices, desktops/laptops, storage, etc.) and software as well as related agreements such as contracts. Given that ITS is an IT service provider, IT asset management touches almost all parts of the organization throughout the service delivery lifecycle, which also means the level of commitment is both broad and deep. Properly managed assets will significantly reduce operational costs and also improve service levels and financial controls. With the implementation of standardized asset management processes in FY10/11 across key asset types, implementation of BMC's Atrium Discovery and Dependency Mapping (ADDM), and the BMC upgrade enabling the Definitive Software Library, the next level of maturity including standardized controls and monitoring beyond asset tracking will be enabled while we continually improve deployed processes. We will document the movement of assets, provide better quality controls and compliance, improve the bottom line and reduce cash outlays and finally improve efficiency and effectiveness. BMC's Atrium Configuration Management Database (CMDB), Definitive Software Library, contracts module and Discovery and Dependency Mapping (ADDM) software tool are the key tools enabling the asset management program. The CMDB is the repository of data relating to assets under change control. With BMC's platform, ITS has an agent and agent-less based toolset, which is best practice in the IT asset management arena. The result is integration with the Service Management (Service Level, Incident and Problem Management) and Change Management modules, allowing for more proactive decision making.

- **Objective: Operational Efficiency, Cost Reduction & Cost Avoidance Initiatives**

The key focus of this objective is to ensure that ITS drives operational efficiency and effectiveness into its processes and in the delivery of services and as a result strives for cost avoidance and cost reductions in operating

expenses. This should translate into rate reductions for services ITS provides to its customers.

- **Application Optimization – Reduction of Duplicate Tool Sets**
  - Organizational Commitment
  - Software (DSL) Management Tools (E.T.) & Process
  - Asset & Configuration Management Tools (E.T.)
  - Software Patch Management (E.T.)

  Description: ITS will be assessing the organization's application platforms across capabilities in order to provide optimization toward an efficient IT. ITS will be looking to optimize strategic applications and consolidate functionality where applicable. The goal is to ensure we are realizing the full value of our application investments and increasing productivity while minimizing the duplication of functionality and the associated costs that duplication drive. Application consolidation will also help improve operational efficiencies and reduce costs which will enhance value to our customers.

- **Technology Optimization**
  - Asset & Configuration Management Tools (E.T.)
  - Virtualization of Technology Solutions (E.T.)
  - Thin Provisioning (E.T.)
  - Cloud Computing Capabilities
    - Infrastructure as a Service (IAAS)
    - Software as a Service (SAAS)
    - Platform as a Service (PAAS)
    - Desktop as a Service (DAAS)

  Description: In an effort to reduce operating costs, maximize the utilization of state assets, reduce deployment and provisioning costs and times, and optimize the overall efficiency of the State's IT Infrastructure, ITS is looking to virtualization strategies in various areas within its portfolio of services. ITS currently provides virtual hosting services utilizing VM Ware for Windows and Linux as well as Virtual containers in the Unix world. ITS has also offered its customers several Enterprise Class Applications in a Software as a Service (SAAS) model and done preliminary investigation into Virtual Desktop solutions.

  The expansion of virtualization technologies into other Service areas such as Desktop, Storage, and Infrastructure with the ability to provision in an automated fashion will further enhance ITS' capability to provide cost effective services in a very timely manner and can at the same time open the door to new service offerings,

improved management of our assets and inventory, as well as improvements in billing and invoicing.

As we move further towards virtual solutions being supplied through the cloud (private and public), ITS will provide customers the ability to self provision some offerings or services such as hosting or storage with little or no human intervention. Though many partners/vendors offer cloud based solutions today, the requirement for state agencies to realize the many benefits derived from a cloud infrastructure is driving the state in the direction of private cloud offerings.

- **Contract Management Initiative**
  - Organizational Commitment
  - Completed and Approved Processes
  - Contract Management Tools (E.T.)

  Description: The creation of a center of excellence for contract management that is accountable for all contract management within ITS will be critical to ensure that both ITS as well as our partners/vendors comply with the terms and conditions associated with the contract. This area will be responsible monitoring this over the life of each contract and providing supporting data to confirm compliance of all parties. This will include but not be limited to:

  1. Assuring that each contract contain specific terms and conditions (best practice)
  2. Assuring that each contract is listed in a data base (with query and reporting capabilities) that contains key information about that contract (i.e., term, amount, purchase order number, invoices received, invoices paid, items ordered, items delivered, contract manager, contract negotiator, etc.)
  3. Assuring that each of the key pieces of contract information is provided 'automatically' from source systems (i.e., an integrated process)
  4. Assuring that the owner of source systems data is identified and notified (through configuration management processes) that changes to source systems must be communicated to the contract management center of excellence.

- **Software & License Management Strategy**
  - Organizational Commitment
  - Asset & Configuration Management Tools (E.T.)
  - Software License Management Tools (E.T.)

Description: Software is a critical asset to IT and must be managed properly to optimize our technology investments. Actual license usage is a key element to the implementation of a strategic software license management strategy. Therefore, the first step will be to assess the true demand for software, in order to purchase and pool software licenses in a way that corresponds exactly with usage needs. With strategic software license management, organizations obtain the maximum return from their software investment by optimizing every dollar spent. In order to realize the benefits of such a strategy, multiple tools must be leveraged to automate the collection of data and generation of key data to enable more efficient decision making. The objectives of the strategy will be to implement these tools cohesively, in this case using BMC's Definitive Software Library simultaneously with BladeLogic agent or similar functional agent, contracts module and ADDM to:

1. Generate accurate and complete usage data that matches a software vendor's licensing model
2. Give license priority to critical users and limit access to software licenses for non-essential users
3. Use alerts to notify administrators of potential problems and use job schedules to automate routine maintenance and usage reports generation
4. Generate advanced warnings when licenses are about to expire
5. Allow administrators to stop unlicensed applications from running if such use violates licensing terms
6. Allow organizations to strategically manage application usage and optimize at the usage level, thereby reducing software spend
7. Enable organizational charge backs based on software usage.

A centralized approach to this effort is required to achieve economies of scale and avoid too many or too few licenses also eliminating the need for licensing experts in individual organizations.

- **Contract Negotiation & Re-Negotiation Activities**
  - Identification of Opportunities
  - Renegotiation Activities

Description: In an effort to reduce overall operating costs and achieve the highest level of return for ITS from its vendors, ITS will do an analysis of all its current contracts to identify likely

opportunities for cost savings through proactive contract re-negotiations. ITS has numerous individual multi-million dollar contracts as well as several vendors who provide a host of services to ITS across multiple contacts where a potential savings may be gained through consolidation and/or re-negotiations.

ITS also procures support contracts for similar types of services from multiple different vendors such as Server Maintenance from the various suppliers who provide servers to the State. Assessments will also be made to understand the potential for bringing multiple disparate contracts for similar or identical services under a single contract from a single provider thereby leveraging the total volume that ITS can offer a provider in exchange for a total cost savings.

- **Activity Based Costing Initiatives**
  - Organizational Commitment
  - Time Tracking Tool (E.T.) & Process

Description: ITS is implementing an Activity-Based Costing (ABC) cost accounting methodology to assess key activities, the cost of those activities and subsequently appropriately allocate those costs to the receipts-based services. With regard to resource management and ABC, ITS, like any other agency/company, has limited resources – funds, people and time to allocate to projects and operations. With a prioritized list of projects and key ongoing activities, we can fund and support the higher-priority projects and key ongoing activities, leaving the lower-priority projects to be completed later. Non-value added activities will be eliminated, and/or the level of effort reduced for low value-added activities. Additionally, this approach will help provide a split view of the cost of ongoing/operational activities versus projects. The benefits gained by implementing ABC include the ability to:

1. Make the organization aware of the total costs – labor, hardware, software, contracts, etc. – associated with a service, including all of the IT activities undertaken by our staff in support of a service(s).
2. Identify the most and least profitable customers and services.
3. Determine the true contributors to- and detractors from-financial performance of services – which activities add value and which do not.
4. Allocate resources to high-value activities, thereby improving the value of employees' skill sets.

5. Accurately predict costs, profits and resource requirements associated with changes in service volumes, organizational structure and resource costs.
6. Easily identify the root causes of poor financial performance.
7. Track costs of activities and work processes.
8. Equip management with cost intelligence to drive improvements.
9. Facilitate better service marketing mix/catalog.
10. Enhance bargaining power with the customer.
11. Better position services.

ITS will be utilizing the Innotas (http://www.innotas.com/) platform for ABC cost accounting, starting with a pilot to assess which activities and granularity are required for rollout to the organization. Rollout is expected to be completed in FY10/11 with continual assessment and improvement as appropriate.

- **Teleworking Initiative**
  - Organizational Commitment
  - Remote IP Phone Capabilities (E.T.)
  - Remote Access to Applications and Tools (E.T.)
  - Instant Messaging (E.T.)

Description: In an effort to improve efficiency, reduce costs, and increase productivity for its staff, ITS implemented a Teleworking program which enabled employees to work remotely (usually from their homes) and conduct business as if they were located at a State owned facility. Looking to the future, this capability will for state employees be further enhanced with improved capabilities in telephony, remote access to applications and data as well as improved unified communications and instant messaging capabilities. In addition to reducing facility related costs teleworking also provides other benefits to the state including:

1. Better preparedness for state employees in the event of a major disaster or event.
2. Higher productivity from employees and increased employee satisfaction with a less stressful work and home environment
3. A more “Green” environment for the citizens of North Carolina

- **Objective: Reduction of Service Costs/Rates & Improvement of Specific ITS Services**

The key focus of this objective is to identify individual ITS Services where the opportunity exists to reduce both costs and rates. Included should be a list of

any operational prerequisites as well as any enabling technologies (E.T.) which will be required to achieve the goal of reducing rates for the specified services.

- **Storage Costs/Rates & Service Improvements**
  - Redefined offerings
  - Define New Rate Models
  - Capacity on Demand Capabilities
  - Refresh Obsolete / Outdated Solutions
  - ROBI & NBU Solutions
  - Tiered offerings (E.T.)
  - Thin Provisioning (E.T.)
  - De-duplication (E.T.)
  - Low Cost Storage (Tier 4)
  - Active Archive
  - Compliance Archive

  Description: This initiative will aid ITS in redefining its storage services with the goal of providing customers a variety of different storage, backup and archival services designed to meet the various storage needs of state government. These services should be provided to ITS's customers hosting at the EDC, WDC, and in some cases at remote sites and will incorporate new rate models designed to bill customers based on actual consumption utilized by their applications and users. Cost and rate models will be defined and revised such that customer bills will be transparent and easily understood. As part of this initiative a definition of the costs associated with each storage service offering will be identified and rates will be calculated against the identified costs and projected consumption. The customer impacts associated with the new rate models will be produced for each customer.

  As an enabling technology Capacity on Demand will provide the ability to grow or reduce storage as needed. It will also help to improve provisioning times and will help to improve the forecasting and demand projection efforts. This will result in lower rates as the customers will be able to grow into their storage requirements over time rather than procure large amounts of storage at the outset of a project or deployment. Plans are to commence efforts in this area beginning Q3 FY 10-11.

  Tiers of storage are planned which will provide customers new options which have not historically been available to our customers. We will move to dynamic tiered service offerings from the current static tiered offerings currently in place today. This will improve the service by improving overall availability and minimizing downtime improving service levels associated with each of the various tiers of

service. This will provide a more effective and efficient collection of storage services with lower costs. New Tiered offerings will include the following:

1. Tier 4 Storage – A very cost effective low cost alternative storage option.
2. Active Archiving - This will improve the service by moving lightly referenced data to an archive platform and out of the flow of main storage and backup.
3. Compliance Archiving - This offering will improve Storage Service by providing long term storage with lifecycle management and discovery capabilities. Overall this should provide a more efficient service with lower costs than what is available today with our tape or disk.

Employing deduplication technologies will enable ITS to significantly improve the utilization of storage resulting in improved capacity management and ultimately provide a lower cost of storage and lower rates. In addition, Thin Provisioning as a technology will enable improvements in the utilization of storage and will enable the usage based model described above.

The Remote Office Backup and Netbackup project should also move to conclusion and should help us to move away from tape and offsite storage costs to a centralized management solution. Using the deduplication features also reduces the network traffic and lowers the costs associated with capacity.

- **Mainframe Costs/Rates & Service Improvements**
  - Redefined offerings
  - Continue Software Consolidation / Reduction
  - Splitting out non Mainframe costs
  - Define New Rate Models

Description: This initiative will enable ITS to separate and better define and align those activities that are offered as part of the standard Mainframe Hosting Services from those that are generally considered value added services. These services should be contracted and billed to agencies through a separate rate model and rates based on the actual consumption of each specific value add service will need to be defined.

The effort previously undertaken to consolidate Mainframe Software will continue with a focus on driving a deeper understanding the purpose and functions for all software utilized by mainframe and supported by hosting services. Opportunities lie in the potential reduction of software, tools, and their associated costs

where duplication of functionality across multiple vendor and/or software tools exist. The objective is to evaluate software that is best for purpose, establish an owner, and eliminate redundancy where possible.

Though all rates are reviewed annually, a thorough and detailed review of rate models has not been performed for some time. In an effort to move mainframe services and costing to a more market comparable model a thorough review of all Service and Sub-Service rate models must be performed. This initiative should yield a definitive set of costs associated with all mainframe service offerings (as well as the value add services as discussed above) and provide a strong basis for evaluating Rate Model changes.

- **Distributed Hosting Costs/Rates & Service Improvements**
  - Redefined offerings (Standard Tiers of Services)
  - Define New Rate Models
  - Maintenance Contract Review and Consolidation
  - AIX Service Offering

Description: For its Distributed Hosting Service ITS historically has offered custom built servers based on specific customer stated requirements or desires. In an effort to improve efficiency, reduce cost and steam line the provisioning process ITS is looking to move to a “Standardized Tiered Server” set of offerings. The purpose of this initiative is to define not only the standard server models but also the standard services that accompany each tier of service. ITS will still provide custom solutions when the standard tiers of service can not meet specialized project requirements however the drive will be to minimize this practice due to the significant costs associated with defining and provisioning custom solutions versus standard configurations. Historically as ITS has not provided a standard service tiers to customers, costs have been recovered using an expense model. With the establishment of the standard tiers of service would come a standard set of rates thereby simplifying the costing of rate models and ultimately all of the related financial and billing related activities.

Distributed Hosting is also looking to reduce its overall maintenance costs. Market research indicates the potential to save 20-30% of our server maintenance expenses by consolidating our server maintenance contracts to a dedicated third party. The purpose of this initiative is to prepare an RFP and to evaluate the vendor response based on the maintenance requirements of the distributed hosting service as a whole.

ITS is looking to expand its hosting options or services to include AIX services. DHHS will be one of the first consumers of this service in support of NCFast. The purpose of this initiative is to establish AIX as a formally supported service offering at ITS. In addition to DHHS, other projects have in the past raised the requirements for an AIX solution. This effort will fill that gap.

- **Network Costs/Rates & Service Improvements**
  - Redefined tiered offerings
  - Splitting out non commodity costs
  - Rate Model Analysis & Revised Definition
  - DNS, DHCP, IPAM Initiative (E.T.)
  - Server Farm Network Assessment & Improvement Initiative
  - IPS Redesign Initiative
  - WAN & Data Center Network Optimization Initiative
  - Redundant Internet Connectivity

Description: A review and analysis of existing rate models will be performed in an effort to ensure delivery of services is optimized, cost effective, and aligned with the market. Once the analysis is completed recommend changes to the rate model [if applicable] will be brought forward to management for review and approval. An additional goal of this effort is define tiers of service for customers procuring network services from ITS. Also in scope will be a review of the Server Farm rate model and rates, LAN Services rate model and rates, as well as a review of commodity type services in an effort to make these more market competitive from a customer's perspective.

A project to refresh existing DNS infrastructure, refresh existing IPAM infrastructure, and establish new centralized DHCP infrastructure. The current DNS infrastructure does not allow for a split DNS infrastructure that is required for security and is best practice for DNS service. Additionally, this will provide additional features and functionality for managing IP address space and DHCP configurations.

ITS will revisit the Server Farm implementation architecture to lessen complexity and operational effort to support the Server Farm infrastructure. As part of the implementation review a recommendation should be brought forward enabling better scalability with existing infrastructure in an effort to reduce hardware and software expenses and reduce overall costs. This will result in a migration to more simplified security zoned

infrastructure versus current model of replicating zones on a per agency \ per application basis.

An effort to rebid the Internet Access Contract will be undertaken to address reliability concerns with current service being provided by our single provider. The goal is to obtain an equivalent level of service availability at the same or lower cost while eliminating the single point of failure that utilizing a single provider puts the state in.

- **Desktop Services**
  - Automation of Desktop Support
  - Redefined tiered service levels
  - System Deployment Tools (E.T.)
  - Software Deployment Tool (E.T.)
  - Software Patch Management (E.T.)
  - Remote Desktop Management Capabilities (E.T.)
  - Virtual Desktop Infrastructure Capabilities (E.T.)
  - Application Virtualization Tool (E.T.)

  Description: Automated system and software deployment capabilities, coupled with automated software patch management are key capabilities for significantly reducing support costs in our enterprise environment. These capabilities have not been adequately addressed in our current environment. Current software and patch deployment toolsets are primarily manual and cumbersome, often resulting in delayed and incomplete deployments. In addition, current enterprise toolsets do not address system deployment or virtualization technologies, both of which will be critical as the organization makes strategic moves into the current generation of operating systems (e.g. Windows 7) and applications (e.g. Office 2010). With enterprise system deployment tools, we will be able to not only deploy new systems, but we will be able to perform unattended, automated upgrades (or redeployments) to existing systems, further reducing the number of desk side visits required of field technicians. Similarly, application virtualization and VDI technologies, coupled with enhanced remote desktop management capabilities, will further reduce the need for costly-desk side visits by segregating software applications from one another and by segregating the base operating system from both applications and hardware. Remote Desktop capabilities will provide quick, cost-effective access for providing end-user support without the costs required for desk side visits by technicians. Cumulatively, these capabilities will enable us to provide more efficient and more effective services by allowing us to support higher numbers of systems without adding technicians at the rates currently required to service our customers. By increasing the

efficiency and effectiveness of our services, we will be able to provide cost-effective, high-quality tiered service offerings to our customers, including support for products not currently supported by any groups within ITS.

- **Objective: Continuous Improvement to ITS Operations**

The focus of this objective is to ensure that ITS engages in continual service improvements across the organization and thereby continues to drive ongoing improvements in operational effectiveness and efficiency. Most of the initiatives in this section of the ITS IT Plan are continuing initiatives carried over from last years IT Plan.

- **Enterprise Service Desk Strategy**
  - Implement Enterprise Service Desk Strategy
  - Enable self-help functionality
  - Increase 1st call resolution across all service offerings

  Description: Position the ITS Service Desk as the IT Enterprise Service Desk for the State of NC Executive Agencies by defining & implementing process improvements, increasing First Call Resolution metrics & integrating Service Desk self-help functionality in the MyITS Portal Initiative.

- **MyITS Portal Initiative (ITS Web Integration and Business Enablement "IWIBE" Initiative)**
  - Define, Design & Implement
  - Streamline customer access to information & systems
  - Reduce volume of general service requests
  - Develop collaborative online forums for enhanced customer service/satisfaction/engagement

Description & Goals for the IWIBE Program:

1. A branded identity that is easily navigable, accessible, in alignment with the needs of ITS customers and employees, with consistently applied standards and accurate, well presented content that is managed and easily updated through a web content management system.
2. Establishing ongoing, shared governance to set direction, recommend solutions, and prioritize efforts. Web governance is central to an effective web presence, as strategies and decisions related to the web directly impact all ITS constituencies.
3. Articulating an ITS strategy for how the web will be used as a communications and business asset.

4. Defining supporting roles, responsibilities, and processes for creating and publishing consistent content to the web.
5. Updating the function and design of ITS's web presence to support our communication objectives through creation and distribution of a suite of design templates and content guidelines – information architecture, including robust search capabilities. The site will include interactive forms and other web-enabled capabilities as required.
6. Implementing a robust toolset including a web content management system to support agency-level, service-level and program-level web presence(s), and provide those divisions, sections and programs with resources to meet their publishing needs. The system will allow content providers to quickly, easily display and update content relative to their roles within their organizations, and reinforces compliance with consistent design elements and proposed navigation systems.
7. Establishing a customer portal – MyITS. MyITS will be a single sign-on (SSO) web-based dashboard for customers of ITS services. The primary intent is to a) offer customers 21st century technical self-service capabilities for researching, ordering, tracking, receiving, and status reporting of services—especially for day-to-day service ordering activities—and b) provide timely information in an easy to access manner on items of interest to customers, such as invoices, status of service desk tickets, volume and cost history, etc.

- **Operational Excellence**
  - Continue Operational Excellence Program (OEP) Activities

Description: ITS continues to focus on becoming a customer and process focused IT. The Operational Excellence Program (OEP) is a continuous service improvement program that seeks to develop ITS into the State's center of excellence for IT infrastructure service management. ITS will continue to focus on providing the right level of service quality and improving service delivery through process reengineering. The OEP will drive the standardization of processes in an effort to increase operation automation and help reduce service delivery costs. ITS will be implementing ITIL V3 in alignment with the Remedy 7.6 rollout.

- **Project Management**
  - Continue improvements in Project & Program Management

Description: ITS is transitioning to a strategic project management environment. This is an evolving process that requires participation and commitment across the agency. In making the transition, we

must address the organizational and cultural aspects and in doing so make coordinated changes in several areas. Portfolio management is one of those aspects.

Portfolio management involves project prioritization and resource allocation using factors such as budget and priorities, then incorporating the big picture through strategic alignment assessment. This requires the definition of prioritization criteria, in addition to having a clear understanding of our resource capacity and capabilities. A prioritization algorithm has been established but needs to be completely integrated into the management decision processes, taking into account the organization's resources more effectively and efficiently via resource management. The use of Innotas, ITS's chosen portfolio, project and resource management tool, will be a critical tool for these efforts.

- **COOP and DR Initiatives for ITS Services & Operations**
  - Continue COOP & DR Activities and extend these activities to include non-ITS Services & Operational Applications

Description: ITS provides continuity of operations planning (COOP) and disaster recovery (DR) testing for identified agencies. ITS will focus on building a COOP and DR infrastructure service that meets the needs of consolidated agencies. Additionally, ITS will look at expanding the COOP and DR services offering to include non-ITS Services and Operational Applications.

- **Objective: Technology Specific Initiatives - Reasons**

The key focus of this section is to identify and list any significant initiatives which we are currently aware of for the coming year which are being driven by ITS directly or are being driven by Agency Specific Projects or programs. Each will also provide a reason or provide justification for the initiative.

- **End Point Security – Required by SCIO**

Description: As required by the State CIO's office, the selection of a common endpoint security solution by Desktop and Distributed Hosting services offers ITS the opportunity to take advantage of economies of scale by delivering a solution that can be used for all clients, including all of the consolidated agencies. We also have the ability to leverage common (and more extensive than currently available) reporting and management functions to minimize the

overall support and management costs required for end-point security.

- **Window 7 Desktops refresh – Currently at N – 2**

  Description: Windows 7 provides a fully-functional platform which can provide a cohesive desktop environment with a single (or at most few) image. Due to Windows 7's hardware-independent image capabilities, instead of a new image being built for each hardware platform, we will be able to reduce hardware (disk) and support costs related to creating and maintaining images. Coupled with our Microsoft EA benefits, Windows 7 will provide a platform for which we can utilize application and system virtualization on an enterprise scale, lowering support costs by taking better advantage of automation and remote management technologies.

  We are currently overwhelmingly dependent upon Windows XP, failing to take advantage of currently available hardware platforms, as most of our install base is on an old (N-2) operating system platform for which hardware support will be more and more rapidly disappearing. With Windows XP falling to N-2, implementation of Windows 7 will help retirement of the current, obsolete platform.

- **Office 2010 Deployment – Currently at N-1 or N – 2**

  Description: Office 2010 has been the current version of Office for several months; the majority of our user base is Office 2003. We have had limited deployment of Office 2007 (almost exclusively ITS), upgrading our users to obsolete version N-1. Our licensing for Office is for Office 2010, and we are implementing Exchange 2010 in our email environment. In order to bring our users into a cohesive, supported environment and to provide full functionality with our Exchange environment and with upcoming technologies, it is imperative that we begin deploying Office 2010 as soon as possible. One of the major advantages of Office 2010 is its integration with virtualization and cloud technologies which will enable us to more effectively deploy and support the platform than we can with any of the versions we currently have in wide-spread distribution.

- **EDC Data Center Network Refresh & Optimization Initiatives**

  Description: Deployment of the new network infrastructure [Nexxus] to address product End of Life status and allow for consistent implementation of new standard footprint for networking infrastructure within the Data Center. Successful implementation

should be synchronized with the Server Farm Network Assessment and Improvement Initiative.

- **Internet connectivity Redundancy Initiative – Mitigate SPOF**

  Description: A rebid of the current Internet Access Contract will be undertaken to address reliability concerns with current service being provided by single vendor (SPOF). The goal is to obtain an equivalent or improved level of service availability as well as a secondary access vendor thereby eliminating the single point of failure. The goal would be to do so at the same or lower cost.

- **Novell/Directory Services Initiative – Obsolescence**

  Description: The legacy statewide eDirectory tree, aka the "NC Tree", consists of (a) eDirectory infrastructure hosted on approximately 20 Netware & Linux servers and (b) agency Netware (primarily) servers that provide distributed file & print services. These agency servers number in the low hundreds with large concentrations operated by DHHS, ESC, DOC & DENR. Due to loss of 3rd party support for file & print add-on services and related server & workstation management services, along with the advent of NCID for identity management, this service will need to retire by March, 2012 when vendor support for the terminal release of Netware (6.5) expires.

  The stated direction forward is migration to Microsoft's Active Directory for file & print, and server/workstation management. Identity Management functions rightly belong with NCID.

- **AD / Directory Services – Novell Replacement**

  Description: As stated above, Microsoft's Active Directory (AD) is the stated direction forward for file & print services, along with Windows workstation/server management. AD has extensive 3rd party vendor support for these functions and is often a pre-requisite for major Microsoft Application Servers such as Exchange, SQL Server & Sharepoint. ITS completed its own Netware-to-AD migration a year ago and is actively migrating consolidated agencies into the Enterprise AD design.

- **NCID Next Generation Project**

  Description: NCID NG ("Next Generation") Project is taking the state's identity management services to the next level by (a) replacing the legacy Oblix/Oracle system currently in place, which

will lose Extended Support from Oracle on 12/31/10, (b) providing a robust, scalable system capable of expanding to handle millions of citizen accounts and hundreds of integrated applications, (c) delivering enhanced auditing & compliance capabilities, (d) furnishing an upgraded platform for federation based on Liberty Alliance & WS-Federation standards and (e) enhancing application integrations with proxy-based, agent-less integration capability that removes application version dependencies on the current agent-based WebGate integrations.

- **DNS Refresh Project – Obsolescence**

  Description: This is a project to refresh existing DNS infrastructure, refresh existing IPAM infrastructure, and establish new centralized DHCP infrastructure. The current DNS infrastructure does not allow for a split DNS infrastructure that is required for security and is best practice for DNS service. Additionally, this will provide additional features and functionality for managing IP address space and DHCP configurations.

- **ADDM Implementation – Operational Improvement**

  Description: This effort will be centered around the implementation of BMC's Atrium Discovery and Dependency Mapping (ADDM) tool set in support of the Asset Lifecycle Management processes. Usage of this new tool along with the CMDB repository of data relating to assets under change control will integrate with the Service Management (Service Level, Incident and Problem Management) and Change Management modules of Remedy, allowing for more proactive decision making.

- **Remote Office Backup - Operational Improvement**

  Description: This service is changing and being enhanced. The goal is to reduce costs and improve data security by moving away from tape and offsite storage vaults. Using deduplication and replicating the backup to either the EDC or WDC we can manage remote office backups centrally. This also removes the need for pickup and delivery of tape cartridges to an offsite vault or secured location. This also lessens the need to dispatch a person daily or weekly to repair equipment in the field or have people at the site handle tape shipping. It also ensures a better quality backup as central monitoring can respond to a problem much quicker and ensure the backups are completing.

- **Server Reduction / Virtualization / Relocation – Efficiency**

  Description: This effort is focused on the assessment of approximately 1000 servers housed at EDC that are used by ITS to run its services and business operation. Goals of the assessment and recommendations are to (a) decrease the total footprint, (b) maximize use of WDC, and (c) increase utilization of virtual servers.

- **Agency Consolidation Efforts – Legislation**

  Description: Program activities for FY10-11 include a massive server consolidation for DENR to be completed before agency relocation occurs in 2Q 2011. This will shrink 200+ servers to 60+ servers and relocate most of the Production servers to WDC. Strategic next step after this consolidation will be to complete elimination of Novell across DENR, by migrating to Active Directory.

- **Enterprise Service Bus – NC Fast Requirement**

  Description: An Enterprise Service Bus or ESB is common message and file transport fabric used to interconnect multiple disparate systems and pass information between them in a well defined and orchestrated manner. NCFAST (Families Accessing Services through Technology) is a project currently underway with DHHS which will be hosted at ITS and employ an ESB as part of its design. NCFAST will interconnect many systems within State and Local government and will have links to Federal agencies as well.

  Working with DHHS ITS is beginning the design of an ESB for NCFAST. ITS clearly understands the criticality of NCFAST and how important a proper and flexible design to this project, and as a result has committed significant resources to this effort. Through these efforts ITS also hopes to create an ESB service which could be used by any large State Agency project and by scaling this effort across many agencies ITS has the goal of driving costs down and making this a reusable solution.

- **Voice Mail Replacement Project – Obsolescence**

  Description: ITS supports three voice mail systems, each connected to a specific legacy voice platform. This initiative will enable us to consolidate to one system serving all enterprise voice users. The impact of this initiative is reduction in operations cost and lower rates to our users, significant improvement in productivity enhancing capabilities, as well as a technology base for improving communications – all users will be on the same voice mail system.

This platform will serve as an integral component in the State's evolving integrated/unified communication strategy. In concert with other ITS platforms, it will support "presence" capabilities, mobile text to speech services, and etc.

- **SIP & Economy Voice Service – Operational Improvement**

  Description: For the most part North Carolina State Government, like most other public or private sector entities, has not realized an improvement in capabilities and reduction in cost for voice communications equipment and services comparable to those improvements realized in other Information Technology services.

  Recent advances in "open source" voice communications products and SIP based routing engines coupled with different delivery models for hosted services, such as Skype, is likely to drive changes in this paradigm. Based on input from customers we believe there is a need for an enterprise service that complements the existing ITS Voice Services portfolio by offering services with a limited feature set, limited SLA's, and a price point below our existing service offerings.

  The goal of our strategic initiatives for "Economy Voice" is to build the business, technical, and support model to fill the need of a basic, low cost voice communications tool utilizing the most current protocols and telecommunications technologies. Our premise is that this additional offering will give our customers more choices of capabilities and price points. The service should enable agencies to better match services and cost with state employees' job requirements.

- **SIP Service Offerings:**

  Description: Telecommunications service suppliers are now near a "production ready" service offering for SIP trunking. This new technology has the potential to substantially reduce the cost of access to the public switched telecommunications network (PSTN) as well as reduce the state's cost for telecommunications hardware to facilitate access to the PSTN.

  The goal of our strategic initiative for "SIP Trunking" is to build the business, technical, and support model to fill the need of lower cost, higher value connectivity service to the PSTN. We expect to implement these services first on our enterprise voice platforms and

then extend the offerings to other customers when the business case justifies.

- **SIP Enabled IVR:**

  Description: ITS has planned for the SIP enablement of its enterprise IVR platform. We will replace the existing legacy H.323 connectivity protocols and connectivity methods with the most current IVR access method. The impact of this strategic initiative will be realized in lower implementation cost for two pending IVR replacement projects, DMV and DOR; lower connectivity cost for existing IVR customers: greater flexibility in web integration for contact center applications; and lower cost disaster recovery approaches.

Application modernization and evolution (Req A.2)

Due to the rate of change and the speed at which obsolescence is reached in technology today ITS will be looking to modernize or replace multiple systems or applications as part of this plan. This effort is closely coupled to the Application Optimization initiative mentioned above but goes beyond just the application space. Major systems such as DNS are also in scope for replacement over the coming year. ITS operates a significant number of older and/or duplicate tools across the organization. The application optimization initiative should enable ITS to reduce the number of duplicate tools while improving operational efficiency and lowering costs. Please refer to the "Major Objectives, Initiatives, and Enabling Technologies" section above for details on other initiatives.

Client computing strategy (Req A.3)

Over the course of the coming year ITS will be working on multiple initiatives to ensure an ongoing viable and up to date Client Computing Strategy is in place for our base of customers in this space. With the recent signing of the ITS Microsoft EA Agreement ITS is well positioned to ensure that the Windows based platforms provided by ITS to it's customer base as part of the Desktop Service can and will be managed more effectively and within State Policies and Standards. As part of the EA, ITS has available a suite of capabilities which will enable more effective and efficient management of the installed desktop inventory for deployment of OS and browser upgrades, as well as other software delivery, patch management, license management as well as remote control functionality. Based on the terms of the licensing under the Microsoft EA, ITS will have considerably more flexibility in moving into the VDI space while avoiding the risk of additional licensing costs from Microsoft.

ITS will also undergo an effort to migrate from the existing set of end point security solutions to a single vendor. An evaluation of the two winning vendors from the “End Point Security” RFP focused on identifying a single provider for all of ITS and the consolidated agency customers will be performed. Once a solution is selected a migration plan will be defined and the migration from current solutions to the new solution will begin. Please refer to the “Major Objectives, Initiatives, and Enabling Technologies” section above for details on other initiatives related to, and supporting the ITS “Client Computing Strategy”.